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CITGO Petroleum Corporation
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Tulsa, Oklahoma 74102

Material Safety Data Sheet

Trade Name: AC-20 Asphalt

Commodity Code: 15-200

Synonyms: Asphalt, Unoxidized Asphalt

Date: March 19, 1992

CAS No.: 8052-42-4
(Refer to Section 1)

Technical Contact: (609) 423-5400
Medical Emergency: (918) 495-4700
CHEMTREC Emergency: (800) 424-9300

CITGO Index No.: 1470

Material Hazard Evaluation

(Per OSHA Hazard Communication
Standard [29 CFR Part 1910.1200]) (OHCS)

Health: Inhalation and dermal irritation hazard from hot product.

Precautionary Statement: **WARNING**: Hot asphalt may release irritating fumes of toxic hydrogen sulfide gas. Hot liquid causes burns.

HMIS Rating[1]: Health 1 Flammability 1 Reactivity 0

1.0 Generic Composition / Components

Components	CAS #	%	Hazard Data
Asphalt	8052-42-4	100	Oral LD50(rat): 5-15g/kg TLm96: > 1000ppm

See also Environmental Section 9.0

[1] Hazard Rating: least-0; slight-1; moderate-2; high-3; extreme-4
CITGO assignment based on our evaluation per NFPA and NPCA guidelines.

NA - Not Applicable ND - No Data NE - Not Established

2.0 Physical Data

Physical Hazard Classification (Per 29 CFR Part 1910.1200)

No	Combustible	No	Flammable	No	Pyrophoric
No	Compressed Gas	No	Organic Peroxide	No	Reactivity
No	Explosive	No	Oxidizer	Yes	Stable

Boiling Point, 760 mmHg, °C(°F):	482 (900)
Specific Gravity (60/60°F) (H_2O = 1):	1.0-1.2
Vapor Density (Air = 1):	> 1
% Volatiles by Volume:	None
Melting Point, °C(°F):	ND
Vapor Pressure, mmHg (15°C):	< 0.0001
Solubility in H_2O, % by Weight:	Insoluble
Evaporation Rate (Butyl Acetate = 1):	NA
pH of Undiluted Product:	NA
Molecular Wt.:	> 2000
Appearance and Odor:	Black solid or viscous liquid; tar-like or heavy hydrocarbon odor

3.0 Fire and Explosion Data

Flash Point, COC, °C(°F)	> 232 (> 450)
Flash Point, PM, °C(°F)	ND
Fire Point, COC, °C(°F)	ND
NFPA Rating[2]	Health: 1 Flammability: 1 Reactivity: 0
Flammable Limits (% by volume in air)	Lower: NA Upper: NA
Extinguishing Media	CO_2, dry chemical.
Special Fire Fighting Procedure	Wear self-contained breathing apparatus when in a confined area. Avoid inhalation of fumes. Water or foam may cause frothing.
Unusual Fire or Explosion Hazard	Under some conditions, sulfur compounds in hot asphalt may evolve hydrogen sulfide. This is a colorless gas. At low air concentrations the odor resembles decaying eggs. At higher concentrations, odor fatigue may occur, resulting in life-threatening inhalation hazard.

[2] Hazard Rating: least-0; slight-1; moderate-2; high-3; extreme-4
CITGO assignment based on our evaluation per NFPA guidelines.

NA - Not Applicable ND - No Data NE - Not Established

4.0 Reactivity Data

Stability:	Stable
Conditions Contributing to Instability:	Extreme heat
Incompatibility:	Strong oxidants such as chlorine liquid, oxygen, etc.
Hazardous Decomposition Products: (thermal, unless otherwise specified)	CO, CO_2, H_2S, Hydrocarbon fumes, SO_2, Smoke
Conditions Contributing to Hazardous Polymerization:	NA

5.0 Spill or Leak Procedures

Procedures if Material is Spilled:

- No flares, smoking or flames in hazard area. Stop leak if manageable without risk.
- *Small spills*: Take up with sand or other non-combustible absorbant material and place into containers for later disposal.
- *Large spills*: Dike far ahead of spill for later disposal. Mechanical containment may be required for hot liquid spills.
- Report spills as required to appropriate authorities.

Waste Disposal:

- Follow local, state and federal regulations.
- RCRA Hotline Number: 800-424-9346.

Protective Measures During Repair and Maintenance of Contaminated Equipment:

- Avoid skin contact with hot liquid. Refer to Section 7.0.

6.0 Health Hazard Data

Health Hazard Classification

(Per 29 CFR Part 1910.1200)

No	Carcinogen	No	Corrosive
No	Animal Carcinogen	Yes	Irritant (fumes)
No	Suspect Carcinogen	Yes	Sensitizer (possibly phototoxic)
No	Mutagen*	No	Teratogen
No	Highly Toxic	Yes	Target Organs: (Respiratory system)
No	Toxic		

*Under study by NTP

Product listed as Carcinogen or Potential Carcinogen by:

NTP No IARC No OSHA No Other No

Toxicity summary: Fumes toxic or irritating to eyes, skin, and respiratory system.

Major Route(s) of Entry: Inhalation of incidental mists or vapors, skin contact.

Acute Exposure Symptoms

Inhalation: Asphalt fumes may cause moderate irritation to respiratory system. At low concentrations, hydrogen sulfide has an odor of rotten eggs. It causes eye and respiratory irritation at concentrations of 10 to 50 ppm. At high concentrations (500-1000 ppm) hydrogen sulfide acts as a systemic poison, causing unconsciousness and death by respiratory paralysis.

Dermal Contact: Asphalt is normally shipped hot (280-350°F) and will cause burns to the skin. Repeated or prolonged contact at ambient temperatures may cause skin irritation.

Eye Contact: Contact with hot product will cause eye burns. Vapors are irritating.

Ingestion: Practically non-toxic. However, chewing of asphalt has caused gastro-intestinal effects.

Injection: Injection is not a likely route of exposure.

Chronic Exposure Symptoms

Asphalt fumes are irritant to eyes, skin and respiratory tract. Repeated or prolonged contact with asphalt at ambient temperatures may cause skin irritation.

Other Special Effects

Data published for the product generally refers to dermal contact at ambient conditions for potential chronic effects. Good personal hygiene is expected to eliminate any long-term effects. Acute hazards are recognized at the elevated temperature of use. Severe burns to the skin and eyes can occur with contact. Eye and skin protection should be used when there is a splash potential. Hot fumes may provide discomfort and irritation upon breathing. Respiratory protection may be required when working with hot product in enclosed areas where there is insufficient ventilation. Caution H_2S! Since sulfur compounds in hot asphalt may form hydrogen sulfide (H_2S) gas, precautions should be taken. H_2S is a colorless toxic gas with an odor at low concentrations characteristic of rotten eggs. Odor cannot be relied upon as a means of detection because the sense of smell rapidly becomes insensitive to H_2S, and the H_2S odor may be masked by the odor of hot asphalt. Because H_2S may accumulate in tanks and bulk transport compartments, personnel should stand up-wind and avoid breathing vapor when opening hatches or dome covers. Experience has shown that there is little danger to persons gauging or sampling asphalt tanks. Hydrogen sulfide has been measured in dangerous concentrations inside asphalt tanks, but measurements a foot or more away from hatch openings have not shown hazardous levels.

Medical Conditions Aggravated by Exposure

Dermatoses and other skin conditions.

First Aid and Emergency Procedures for Acute Effects

Inhalation: For effects by asphalt fumes, remove to fresh air. Provide respiratory assistance, if needed. If overcome by hydrogen sulfide, immediately evacuate to fresh air, call physician and administer oxygen.

Dermal: If burned by hot product, cool skin by quenching with cold water. Do not remove hot product. Cool with ice. Seek immediate medical aid. For contact with product at ambient temperatures, wash with soap and water.

Eye Contact: If product is splashed into eyes, flush with cool water, and obtain medical attention immediately.

Ingestion: Not a primary route of exposure. Chewing of asphalt is not recommended.

Injection: NA

Notes to Physician: Hot asphalt may cause eye and skin burns; fumes are irritant to respiratory system, skin and eyes. Treat intoxications as hydrogen sulfide or sulfur dioxide effects.

7.0 Special Protection Information

Ventilation Requirements: When handling hot product, in confined areas, use forced air ventilation systems to maintain asphalt fume concentrations below 5 mg/m³

Permitted Air Threshold Concentrations:

		TLV ppm (mg/m³)	OSHA PEL ppm (mg/m³)
Asphalt Fumes	TWA:	(5)	- -
Hydrogen Sulfide	TWA:	10 (14)	10 (14)
	STEL:	15 (21)	15 (21)
Sulfur Dioxide	TWA:	2 (5)	2 (5)
	STEL:	5 (13)	5 (13)

Specific Personal Protective Equipment:

Respiratory: Air concentrations of fumes or vapors determine the level of protection needed. Use only NIOSH approved respiratory equipment. Air-supplied respirators are required for confined space entry.

Dermal: Protect against hot liquid. Use heat and chemical resistant gloves. Avoid direct skin contact.

Eyes: Use splash proof goggles with face shield when handling hot product.

Other Clothing or Equipment: For potential contact with hot asphalt, use whole body protection. Discard contaminated clothing, including shoes. Wash skin thoroughly with soap and water after handling.

8.0 Transportation and Special Precautions

Storage: Material is classified as NFPA Class III B combustible liquid. Store distant from fire and ignition sources.

Consult appropriate Federal, State and Local authorities before reusing, reconditioning, reclaiming, recycling or disposing of empty containers and/or waste residues of this product.

DOT Information

DOT/UN Shipping Name:	Elevated Temperature Material, Liquid, NOS
Hazard Class:	9
Hazard Identification Number:	NA 9259
DOT Placard:	HOT

9.0 Environmental Data

Product Name	AC-20 Asphalt
Commodity Code:	15-200

SARA TITLE III

Section 313 - Toxic Chemicals

This product does not contain toxic chemicals of Section 313 of Title III, Superfund Amendments and Reauthorization Act of 1986 (SARA) and 40 CFR Part 372.

Components	CAS#	%
None	NA	NA

Section 311 - Hazard Categories

No	Not Applicable	No	Fire Hazard
Yes	Acute (fumes only)	No	Sudden Pressure Release
No	Chronic (Delayed Health Hazard)	No	Reactivity Hazard

Section 302/(A) - Extremely Hazardous Substances

(RQ = Reportable Quantity)
(TPQ = Threshold Planning Quantity)

This product does not contain Extremely Hazardous Substances of Section 302/(A).

Component	CAS#	%	RQ lbs.	TPQ lbs.
None	-	-	-	-

Clean Water Act

Under Section 311 (b) (4) of the Clean Water Act, discharges of crude oil and petroleum products in any kind or form to surface waters must be immediately reported to the National Response Center: 800-424-8802.

Comprehensive Environmental, Response, Compensation & Liability Act (CERCLA) - Section 102 Hazardous Substances

Component	CAS#	%	RQ lbs.
NA	-	-	-

Petroleum and petroleum fractions are excluded from the list of CERCLA hazardous substances by Section 101(14) of CERCLA.

Federal Regulations

Reported in TSCA Inventory:

Product	x Yes	___ No	___ NA
Components	___ Yes	___ No	x NA

CALIFORNIA Proposition 65

Tradename: AC-20 Asphalt

Contains components that occur on lists of:

Carcinogenic Materials	___ Yes	x No
Teratogenic Materials	___ Yes	x No

New Jersey Worker and Community Right-to-Know Act

Asphalt CAS#: 8052-42-4

10.0 Labeling

CAUTION

Hot liquid may cause burns to eyes and skin. Fumes may be toxic and irritant to the respiratory system.

FIRST AID

Skin and Eyes: Cool Affected Area With Water or Ice and Seek Immediate Medical Aid. Respiratory: Administer Oxygen and Seek Immediate Medical Aid.

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